WHAT IS CLAIMED IS:

1. An optical switch for switching communication light beams propagating through a plurality of optical fibers, comprising:

a plurality of input-side lenses to which input light beams connect optically;

a plurality of moving mirrors to which said light beams passing through said input-side lenses connect optically;

a plurality of output-side lenses to which said light beams going by way of said moving mirrors connect optically;

light emitting units for generating light beams optically connecting to said moving mirrors; and

light receiving units to which the light beams coming from said light emitting units and going by way of said moving mirrors connect optically,

wherein said plurality of input-side lenses include first input-side lenses to which communication light beams coming from first external units and propagating through input-side optical fibers connect optically and second input-side lenses to which the light beams from said light emitting units connect optically, and

wherein said plurality of output-side lenses include first output-side lenses for causing light beams passing therethrough to optically connect to second output-side optical fibers adapted to propagate

the communication light beams to second external units and second output-side lenses for causing the light beams coming from said light emitting units and passing therethrough to optically connect to said light receiving units.

2. An optical switch according to claim 1 comprising a mirror control unit for correcting, on the basis of signals from said light receiving units to which the light beams passing through said second input-side lenses and said second output-side lenses connect optically, control values adapted to control angles necessary to move said moving mirrors to which the light beams passing through said first input-side lenses connect optically.

3. An optical switch for switching communication light beams propagating through a plurality of optical fibers, comprising:

a plurality of input-side lenses to which input light beams connect optically;

a plurality of moving mirrors to which said light beams passing through said input-side lenses connect optically;

a plurality of output-side lenses to which said light beams going by way of said moving mirrors connect optically;

light emitting units for generating light beams optically connecting to said moving mirrors; and

light receiving units to which the light

beams coming from said light emitting units and going by way of said moving mirrors connect optically,

wherein said plurality of moving mirrors include a plurality of first moving mirrors to which communication light beams coming from first external units and propagating through input-side optical fibers connect optically and a plurality of second moving mirrors to which the light beams from said light emitting units connect optically.

4. An optical switch according to claim 3 comprising a mirror control unit for correcting, on the basis of signals from said light receiving units to which the light beams going by way of said second moving mirrors connect optically, control values adapted to control angles necessary to move said plurality of first moving mirrors.

5. An optical switch optically positioned between N input-side optical fibers and N output-side optical fibers to switch communication light beams propagating through said optical fibers, comprising:

an input-side lens array including a plurality of lenses optically coupled to said input-side optical fibers;

an output-side lens array including a plurality of lenses optically coupled to said output-side optical fibers;

a primary mirror array having a plurality of mirrors swingably supported to reflect communication

light beams from said input-side lenses; and

a secondary mirror array having a plurality of mirrors swingably supported to reflect the communication light beams reflected from said primary mirror array,

wherein the number of said input-side lenses is N+2 or more, the number of said output-side lenses is N+2 or more, the number of mirrors of said primary mirror array is N+2 or more and the number of mirrors of said secondary mirror array is N+2 or more.

6. An optical switch according to claim 5 comprising light receiving elements and a mirror control unit for controlling positions of the mirrors on the basis of signals from said light receiving elements, wherein each of said input-side lens array and said output-side lens array has a plurality of lenses optically coupled to said light receiving elements and each of said primary mirror array and said secondary mirror array has a plurality of mirrors optically coupled to said light receiving elements.

7. An optical switch according to claim 6, wherein said mirror control unit includes a mechanism for correcting, on the basis of any of a relative position between said input-side lens array and said primary mirror array, a relative position between said primary mirror array and said secondary mirror array and a relative position between said secondary mirror array and said output-side lens array, control values

adapted to control mirrors of said mirror arrays.

8. A method of controlling an optical switch adapted to switch communication light beams propagating through a plurality of optical fibers, wherein said switch has a plurality of input-side lenses to which input light beams connect optically, a plurality of moving mirrors to which said light beams passing through said input-side lenses connect optically, a plurality of output-side lenses to which said light beams going by way of said moving mirrors connect optically, light emitting elements for generating light beams coupling optically to said moving mirrors, said plurality of moving mirrors including a plurality of first moving mirrors to which communication light beams coming from first external units and propagating through input-side optical fibers connect optically and a plurality of second moving mirrors to which measuring light beams from said light emitting elements connect optically, and light receiving elements to which said measuring light beams going by way of said plurality of second moving mirrors connect optically,

said control method comprising the steps of:

detecting the light beams coming from said light emitting elements and connecting optically to said light receiving elements by way of said second moving mirrors; and

controlling said first moving mirrors on the basis of the detected light beams.

9. A control method according to claim 8, wherein a plurality of light receiving units are provided, light beams coming from said light emitting elements and connecting optically to said plurality of light receiving units by way of said second moving mirrors are detected and on the basis of the detected light beams, control values adapted to control angles necessary to move said first moving mirrors are corrected.